

Claims 1-8 were all rejected based upon a single reference, Wainauski.

Wainauski is directed to a blade for an airplane propeller, whereas Claims 1-8 are limited to blades for impellers. The blades used in airplane propellers are not the same as the blades used in fan impellers nor would it have been obvious for one of ordinary skill in the art to have applied elements from the Wainauski propeller blades to impeller blades, since the design considerations for a propeller blade are quite different from the design considerations in an impeller blade.

Impeller blades are designed to generate maximum axial air flow while minimizing axial thrust whereas propeller blades are designed to generate maximum axial thrust while minimizing axial airflow. Additionally, impeller blades are generally configured such that the chord length is substantially perpendicular to the direction of rotation whereas propeller blades are generally configured such that the chord length is substantially parallel to the direction of rotation. The propeller blades in Wainauski were designed with objective of operating efficiently in a plane flying near the speed of sound and to minimize the blades susceptibility to damage from foreign objects (see col. 1, lines 26-30 and lines 54-57) whereas the objective of the present invention is to minimize the chord length of the impeller blade so as to minimize the width of the fan necessary to provide a specific airflow. Accordingly, one of ordinary skill in the art would not have had an incentive to apply the teaching of Wainauski to an impeller blade so as to arrive at the claimed invention.

Additionally, Wainuske teaches away from Claims 2, 5, and 7, in that it teaches having a slight camber to about 40% chord (Col. 1, lines 44-510. It also teaches a maximum camber at 74% chord (col. 7, line 33) and a maximum thickness at 36% chord (col. 7, line 32), which are well outside the maximum thickness and camber ranges required by Claims 2, 5, and